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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,682	02/26/2002	David L. Blankenbeckler	M-12013 US	1491

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EXAMINER

PSITOS, ARISTOTELIS M

ART UNIT	PAPER NUMBER
2653	75

DATE MAILED: 08/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,682

Applicant(s)

BLANKENBECKLER ET AL

Examiner

Aristotelis M Psitos

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— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) all is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/2/04 has been entered.

The amended title of the invention is accepted. Applicants' cooperation is greatly appreciated.

Claim Objections

Claims 1-8,10-17,19-23 are objected to because of the following informalities: In particular, all of the independent claims have been amended to include the functional desired result as recite "... wherein the phase-change material on the lands is the only area on the disc where data information is written to...". This is interpreted as a desired functional limitation; however, such a limitation does not follow from the structure positively claimed – i.e., the remainder of the claim is a product/disc and structure thereof. There is no provision of or ability to write any information anywhere. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims 1-8,10-17,19-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, the claims recite a desired result, with respect to writing only onto the lands. Nevertheless, no disclosure as to how that is accomplished (lack of enablement) is found.

The disclosure does not provide the appropriate support to enable one of ordinary skill in the art to make and use such – i.e., there is no enabled disclosure focusing on ONLY writing onto the land areas of the record medium.

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Response to Arguments

Applicant's arguments filed 6/2/04 have been fully considered but they are not persuasive. Applicants' citation of the noted passages in the specification support the examiner's position, i.e., that there is no support for such phraseology. As noted in these passages, information is written to the lands instead of the groove. The examiner concludes that such is an alternative, i.e., that there is no prohibition of recording to the groove, just that the specification discloses writing to the land instead of. The use of the word "only" in the claim suggests that there is no possibility of writing to the groove. Such is not believed to be the case.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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1. Claims 1-8,13-17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halter et al further considered with Ishibashi et al and all further considered with Horie et al. The following analysis is made:

Claim limitation(s)	Reference(s)
1:	Halter
preamble	abstract
circular substrate, 1 st and 2 nd opposing principal surfaces	substrate 12 (top and bottom surfaces are opposing)
bumps on 1 st portion/represent prerecorded infor.	See col. 1 lines 55-60 & col 3 lines 35-39.
Lands on 2 nd portion	lands 16
Phase-change material deposited on at least 2 nd portion, having 1 st & 2 nd states when written to, writing to only lands for data information	

Halter lacks the specified "bumps" in the servo grooves (18). Although he discloses that information is so found, he does not specify it as "bumps".

Ishibashi et al discloses in this environment the ability of having "bumps" or pits as information in the servo areas.

It would have been obvious to modify the base system of Halter with the above teaching from Ishibashi et al, motivation is to use alternative equivalents for the prerecorded information found in the servo areas – i.e., no patentable difference is seen to occur from selecting between either a "bump" or a "pit" for the prerecorded information.

Halter also lacks any mentioning of a phase change material.

Horie et al teach in this environment, the ability of having phase changing type material as a recording layer, and further more having the recording performed on only the land area(s) – see the abstract and col. 3, lines 10-15.

It would have been obvious to modify the base systems of Halter & Ishibashi et al with the above teaching from Hori et al, motivation is to use existing materials and formatting abilities. This saves the

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need to recreate such materials and formats since they are already known and relied upon in this environment for their existing abilities. Such use permits the retrofitting of the overall disc into existing manufacturing & formatting techniques and hence saving unnecessary expenditure of time, capital and effort.

With respect to claim 2, that the 1st portion has a lower density. The examiner interprets such to refer to "data" density, i.e., the amount of information/data contained in a specified area. The examiner considers such to be inherently present in the above combination of references, because the information contained in a prerecorded format for servo/control is not as dense as the amount of information/data recorded for the recording of information.

With respect to claims 3 & 17, the above combination of reference meets these claims.

With respect to claim 4, this is interpreted as a desired functional limitation. That is that the product (parent claim) has the ability/capability of such upon, after recording is preformed. Since recording is a process and is NOT claimed, the examiner concludes that the above combined references have the ability/capability of meeting such limitations.

With respect to claim 5, the 1st and 2nd portions are on the second principal surface.

With respect to claim 6, this describes the functional ability of the phase-change material and inherently follows, is part of the phase-change material of the Hori et al reference.

With respect to claim 7, Horie et al teaches such at col. 15 lines 34-40.

With respect to claim 8, the above combined references meet the claimed structure and hence meet the definition/label attributed to such.

With respect to claim 13, this is interpreted as a desired functional result, i.e., as a result of a manufacturing step – the step of depositing. As such, the examiner considers such a capability as being met by the above combined references – i.e., for each of manufacturing by depositing the recording material over the entire surface of the disc.

With respect to claim 14, since the material as disclosed/claimed in claim 7 is met by Horie et al, this limitation is considered inherently present as well.

With respect to claim 15, Halter meets such limitation – see the description of the substrate.

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Independent claim 16 is similar to independent claim 1 and is also met by the above combined references for the reasons stated above.

With respect to the limitations of claims 19-22, they describe functional desired abilities of the material. Since the material as disclosed/claimed (claim 7) is met, these functional descriptive limitations are met.

With respect to claim 23, the steps of forming the bumps and lands is considered disclosed in the above Halter reference – see the description of forming the substrate, while the step of depositing the phase-change material is considered met by the above combined references, i.e., the recording material (phase-change as taught by Horie et al) is deposited/placed over at least the land area(s) of the above Halter reference.

2. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above, and further in view of Official notice/Igarashi.

With respect to the dimensional limitations found in claims 10 & 11, 50 mm or less, or 32 mm or less, the examiner considers such to be a desired range normally defined as "mini" discs. Such "mini" discs are known to exist prior to applicants' invention and hence the ability to so limit the size of the disc is considered an obvious variant/ability. Motivation is to increase the robustness of the above combined references so as to be used in mini disc systems.

Alternatively, if applicants' can convince the examiner that such is not a mini disc environment, then the examiner would rely upon Igarashi.

The limitations with respect to the size of the disc are considered obvious in view of Igarashi, which discloses discs less than 80 mm as standard. Selection of appropriate sized disc is merely an optimization of size and obvious to one of ordinary skill in the art.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above, and further in view of Nakamura et al.

With respect to the limitations of claim 12, because the Nakamura et al document discloses various thickness for the overall disc record, the specific limitation is considered merely an optimization of such, and hence obvious over the combination of references in order to optimize the record medium.

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4. Claims 1-3,5,6,8,13,14,16, ¹⁹~~18~~-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda et al considered with Sonnenschein et al and both further considered with Ueki and all further considered with Aoki et al.

Oda et al discloses a hybrid disc having both rom and ram areas – the rom are occurring first followed by appropriate ram (writable areas). There is no particular disclosure with respect to the “bumps” and or the different physical states as required by claim 1.

Sonnenschein et al discloses various recording techniques and materials – see for example column 2 starting at line 15 plus, wherein rom techniques encompass the formation of “bumps”.

It would have been obvious to modify the base system of Oda et al with the acknowledged “bump” formation for the rom area, motivation is to use existing techniques well established for forming rom regions and hence use existing apparatus thereby saving time in redesigning new writing equipment.

Additionally, phase change materials are also taught in the Sonnenschein et al reference.

Furthermore, the amorphous – crystalline materials are further defined in the Ueki reference – see the discussion with respect to the change in physical states accordingly.

It would have been obvious to modify the system of Oda et al –Sonnenschein et al with the additional amorphous-crystalline states since Sonnenschein et al already acknowledges such phase change materials for recording information and using established materials for such is considered merely a substitution of the recording material predicated upon such decisions as cost, availability, reliability ease of manufacturing and hence obvious to those of ordinary skill in the art.

With respect to the newly inserted desired functional ability, i.e., that the information is written to ONLY the land area(s), such is considered taught by the Aoki et al system – see the description of his second embodiment – found at col. 9 lines 39+.

It would have been obvious to modify the base system of the references relied upon above with this additional teaching from Aoki et al, motivation is to provide for the recording in the appropriate area, and hence use/rely upon existing formats so as to permit the overall final disc product compatibility with existing replay devices. This increases the flexibility/robustness of the overall final product.

The limitations of claims 1, 16 and 23 (method of manufacturing) are hence considered met.

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With respect to claim 2, applicants' attention is drawn to figure 8, and the examiner concludes that because the rom area is less than the ram area, the limitation of claim 2 is inherently met.

With respect to claim 3, again see the above figure 8, the first principal portion is the rom area, and the second principal portion is the ram area.

With respect to claim 5, the rom and ram regions are on the same surface and hence this limitation is met.

With respect to claim 6, the phase changing material in the Ueki reference changes the physical state thereof.

With respect to claim 8, in keeping with applicants' own definition, this limitation is met.

With respect to claim 13, the phase change material is found for both the rom and the ram regions.

With respect to claim 14 this occurs as a result of the phase change material.

With respect to claims 19-22 see the above discussion of the materials in Ueki, and the writing to the land area as discussed above. Since the materials are met, the examiner concludes that these functional desired abilities are inherently present when the above combined system produces its final product.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above as stated in paragraph 4, and further in view of Muller and Nakashima.

The data densities described in this claim are well known for discs in this environment. Muller at col. 3 lines 50-68 and Nagashima at col. 1 lines 30-54.

It would have been obvious to modify the base system of the references relied upon as stated above with the particular recording densities, motivation is to permit the formed disc to be compatible with standard record data densities in this environment and hence increase the marketability of such.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above as stated in paragraph 4, and further in view of either Pan et al.

The particular material recited in claim 7 is known as taught by Pan et al.

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Selection of materials used in this environment for the phase changing recording layer is considered merely a selection of alternative equivalents known in this environment, and selection between such is considered obvious for such reason(s) as availability, reliability, cost, etc.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 as stated in paragraph 4 above, and further in view of themselves, or the acknowledged prior art with respect to such phraseology.

As far as the examiner can ascertain, the phrase "first-surface disc" is met either by applicants' own definition of such discs being well known, and or the references. In Halter et al, since servo information is in the first surface, such is present. In Moribe et al, again pre-recorded information, servo data meets the above definition as does Takemura et al.

8. Claims 10 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above in paragraph 4, and further in view of Igarashi

The limitations with respect to the size of the disc is considered obvious in view of Igarashi which discloses discs less than 80 mm as standard. Selection of appropriate sized disc is merely an optimization of size and obvious to one of ordinary skill in the art.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above as stated in paragraph 4 above, and further in view of Nakamura et al.

With respect to the limitations of claim 12, because the Nakamura et al document discloses various thickness for the overall disc record, the specific limitation is considered merely an optimization of such, and hence obvious over the combination of references in order to optimize the record medium.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 as stated in paragraph 4 above, and further in view of Nakamura et al.

In interpreting the above claims, the examiner concluded that the recording material is deposited over the entire record substrate accordingly, as needed. Alternatively, Nakamura et al teaches the ability of placing a laminated recording material over the entire disc substrate.

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It would have been obvious to modify the base system of the art above/combination of references, with the additional teaching of placing the recording material over the entire record medium, such being routine practice in this environment.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 as stated in paragraph 4 above, and further in view of Braitberg et al (WO 00/79526).

Braitberg et al teach the ability of having a plurality of recording/information layers, which the examiner interprets as meeting the different surfaces limitation of this claim.

It would have been obvious to modify the base system as stated above in paragraph 4 with the above teaching from Braitberg et al, motivation is to permit separate information areas and hence increase the recording density of the record.

Conclusion

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohta et al is cited as also illustrative of recording to the land areas only. *Tognazzini & Weidner for two sided disc products.*

Hard copies of the application files are now separated from this examining corps; hence the examiner can answer no questions that require a review of the file without sufficient lead-time.

Any inquiries concerning missing papers/references, etc. must be directed to Group 2600 Customer Services at (703) 306-0377.

Any inquiry concerning the merits of this communication or earlier communications from the examiner should be directed to Aristotelis M Psitos whose telephone number is (703) 308-1598. The examiner can normally be reached on M-Thursday 8 - 4.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aristotelis M Psitos
Primary Examiner
Art Unit 2653



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